

**Summary Report of the
World Trade Center Technical Review Panel
Conference Call**

May 12, 2004

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NOTICE

This report was prepared by Eastern Research Group, Inc., an EPA contractor, as a general record of discussion during the World Trade Center Technical Review Panel Conference Call held May 12, 2004. This report captures the main points and highlights of the conference call. It is not a complete record of all details discussed, nor does it embellish, interpret, or enlarge upon matters that were incomplete or unclear. Statements represent the individual view of each meeting participant, and may or may not represent the analyses or positions of EPA.

ACRONYMS

COPC	contaminant of potential concern
DEP	Department of Environmental Protection
EPA	U.S. Environmental Protection Agency
HVAC	heating, ventilation, and air conditioning
MMVF	man-made vitreous fiber
MCE	mixed cellulose ester
NYC	New York City
PAH	polycyclic aromatic hydrocarbon
PCB	polychlorinated biphenyl compound
SEM	scanning electron microscope
TEM	transmission electron microscope
USGS	U.S. Geological Survey
WTC	World Trade Center

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EXECUTIVE SUMMARY

After the collapse of the World Trade Center (WTC) and the subsequent release of contaminants into the environment, the EPA, other federal agencies, New York City (NYC), and New York State public health and environmental authorities focused on numerous cleanup, dust collection, and ambient air monitoring activities to ameliorate and better understand the human health effects of the disaster. While these monitoring and assessment activities were ongoing, EPA began planning for a program to clean and monitor residential apartments. Residents impacted by the World Trade Center dust and debris were eligible to request federally funded monitoring and/or cleaning of their residences. The cleanup continued into the summer of 2003, by which time EPA had cleaned and monitored 3,400 apartments and monitored an additional 800 apartments.

EPA convened a technical panel of experts who have been involved with the World Trade Center assessment activities to provide advice on the effectiveness of these and related programs. Dr. Paul Gilman, EPA Science Advisor, serves as the chairperson, and Dr. Paul Liroy, Professor of Environmental and Community Medicine at the Environmental and Occupational Health Sciences Institute of the Robert Wood Johnson Medical School-UMDNJ and Rutgers University, serves as vice chair. Two technical panel meetings have occurred in New York City:

- March 31, 2004 at the Alexander Hamilton U.S. Customs House
- April 12, 2004 at the Tribeca Performing Arts Center at the Borough of Manhattan Community College

During the April 12 meeting, the members of the panel decided that an intermediate conference call meeting, held on May 12, 2004, would be helpful for preparing for the May 24, 2004 technical panel meeting at St. John's University.

The purpose of this conference call was to discuss elements of a draft sampling plan to evaluate the incidence of contamination in apartments around the World Trade Center site. This draft sampling plan is under development and is a revision from the first draft sampling plan that EPA developed for the purpose of researching the extent of recontamination of apartments originally cleaned in the initial Residential Assistance Program after 9/11.

Dr. Gilman facilitated the call with the panel members and led the discussion through four points:

- Contaminants for measurement
- Sampling locations
- Sampling objectives

- Overall study design

Catherine McVay Hughes then introduced the public commenters. The key action items from the conference call are presented by discussion topic below.

Action Items from the Contaminants for Measurement Discussion

Pat Evangelista will follow up with Greg Meeker about providing additional background samples.

A panel subgroup will research the following issues:

- Determine what work has been completed toward establishing a signature profile;
- Evaluate what steps would be required to provide a validated method for assessing a signature profile;
- Evaluate the most appropriate method of analysis for the background samples;
- Determine the significance of a sample that does not contain the signature profile; and
- Contact the RJ Lee Group to collect information from their research.

Greg Meeker will lead this subpanel, with help from Paul Liroy, Morton Lippman or a designee, and Mark Maddaloni from EPA Region 2.

Action Items from the Sampling Locations Discussion

Members of the subpanel group will identify and obtain additional private and public sampling data that have been collected. The panel subgroup will be led by David Newman and supported by panelists Catherine McVay Hughes, Krish Radhakrishnan, and EPA Region 2.

Action Items from the Sampling Objectives/Overall Study Design Discussion

Members of the-subpanel group will identify the sampling status of buildings in lower Manhattan. The subpanel will collect recommendations from the community on buildings that should be considered for testing.

Action Items from the Public Comments Session

EPA will try to post agendas and meeting information well in advance of panel meetings.

EPA will post the curriculum vitae of Morton Lippman's colleague if he will be participating with the panel subgroup.

1. INTRODUCTION

After the collapse of the World Trade Center and the subsequent release of contaminants into the environment, the EPA, other federal agencies, New York City, and New York State public health and environmental authorities focused on numerous cleanup, dust collection, and ambient air monitoring activities to ameliorate and better understand the human health effects of the disaster. While these monitoring and assessment activities were ongoing, EPA began planning for a program to clean and monitor residential apartments. Residents impacted by the World Trade Center (WTC) dust and debris were eligible to request federally funded monitoring and/or cleaning of their residences. The cleanup continued into the summer of 2003, by which time EPA had cleaned and monitored 3,400 apartments and monitored an additional 800 apartments. Since then, EPA has developed a draft resampling plan to study the recontamination of residences that were cleaned under the initial program or were inspected and determined to not require cleaning.

EPA convened a technical panel of experts who have been involved with the World Trade Center assessment activities to provide advice on the effectiveness of these and related programs. Dr. Paul Gilman, EPA Science Advisor, serves as the chairperson, and Dr. Paul Liroy, Professor of Environmental and Community Medicine at the Environmental and Occupational Health Sciences Institute of the Robert Wood Johnson Medical School-UMDNJ and Rutgers University, serves as vice chair. Members of the panel include representatives from the federal agencies directly involved in the air quality response and monitoring, the New York City Departments of Health and Environmental Protection, and outside experts.

EPA's goals in forming this panel and holding the current and planned meetings are:

- To obtain more input on ongoing efforts to monitor the situation for New York residents and workers impacted by the collapse of the WTC.
- To help guide EPA's use of the available exposure and health surveillance databases and registries to characterize any remaining exposures and risks, identify any unmet public health needs, and recommend any steps to further minimize the risks associated with the aftermath of the WTC attacks.

Members of the technical panel convened first on March 31, 2004 and again on April 12, 2004. These meetings served to introduce the panel members, define the purpose of the meetings, and begin discussion of a sampling plan. EPA presented the draft resampling design during the first meeting and received comments and discussion on this plan during the first and second meetings. During the April 12, 2004 meeting, it was recommended that EPA revisit the resampling plan, including expanding to include locations that may

not have been previously sampled and to consider additional contaminants other than asbestos. The panel members decided an intermediate conference call was necessary prior to the planned May 24, 2004 technical panel meeting to discuss progress toward these goals. This call took place on May 12, 2004. Information on each of these three meetings is provided on EPA's website (<http://www.epa.gov/wtc/panel>).

1.1 Meeting Purpose

The purpose of this conference call was to discuss the new elements of the draft sampling plan to evaluate the incidence of contamination in apartments around the WTC site. Specifically, EPA sought discussion on the following questions:

- What contaminants should the sampling program measure?
 - Contaminants of potential concern (COPCs)
 - WTC signature
 - Settled dust vs. air sampling methods
- What sampling locations should the program include?
 - apartments
 - office buildings
 - public buildings
- What are the sampling objectives?
 - determine the level of recontamination versus contamination
 - determine the role of central HVAC in redistributing WTC contaminants
 - determine the geographic extent for sampling
- What is the overall study design?
 - contamination vs. recontamination
 - screening level building survey

1.2 Meeting Agenda

The conference call began at 11:00 a.m. and adjourned at 1:10 p.m. Dr. Gilman facilitated the call. After introductory remarks, Dr. Gilman led members of the panel in discussing in each of the four key areas listed above. Catherine McVay Hughes then introduced four public commenters. After these comments and closing remarks, the meeting was adjourned.

2. INTRODUCTORY REMARKS

Dr. Paul Gilman, EPA Science Advisor

The conference call convened at 11:00 a.m. While the members of the panel came on the call, Gilman introduced Mark Wilkenfeld to the panel members, who will attend these meetings at the request of City Councilman Allen Gerson. Gilman originally introduced Wilkenfeld via e-mail to the members of the panel in mid-April; the members of the

panel indicated that they had not received that e-mail, but welcomed his participation. Wilkenfeld is a Professor of Medicine at the Columbia University Health Sciences Division. He has been advising the New York City Council on matters related to the WTC. Gerson asked that the members of the panel coordinate meetings with Wilkenfeld so that he may attend and serve as a liaison for the proceedings back to the council.

Gilman reviewed the objectives for the conference call. The call was held for individual panel members to give input on points of discussion raised at the April 12 meeting and outlined in the agenda. EPA has been working toward fleshing out these issues since the last technical panel meeting, and Gilman stated that this call was to serve as a mid-course check-in. The public was invited to make comments after these discussions before the call was adjourned at 1:10 p.m.

Gilman reviewed the key considerations that the panel members should address to help flesh out ideas for the sampling plan:

- 1) Establishment of a signature for WTC dust;
- 2) Establishment of a baseline for comparison for sampling design;
- 3) Modification of the focus for the sampling plan objectives; and
- 4) Ramifications of the range of the sampling study findings and next steps.

Gilman then led the members of the panel through the discussion points presented on the agenda.

3. CONTAMINANTS FOR MEASUREMENT

Gilman opened the discussion by noting some of the issues regarding contaminants for measurement that were raised at the last meeting. At that meeting, panel members discussed what contaminants are appropriate to measure and determined that asbestos is important, but that other contaminants might also be considered. Some members of the panel do not think that lead sampling should be a priority given some of the previously collected monitoring data. There was further discussion on establishing a WTC signature, possibly from dust samples.

Gilman then asked Greg Meeker to provide a summary of his research on background samples since the last meeting. As part of investigating the possibility of establishing a WTC signature, Meeker received two background samples from EPA Region 2. Morton Lippman asked Meeker to define what is background. Meeker replied that these two EPA background samples were collected north of 79th Street from the same building. He continued, stating that that he was curious to see if slag wool fibers were present in these background samples, since slag wool was used in the WTC construction. He did not find this composition in these samples; however, he reminded the members of the panel that these were only two samples from one building. Meeker expressed the need for a more comprehensive background study to determine if the slag wool fibers are present in any of the background samples. If not found, then they would be a good signature material to identify the presence of WTC dust. Literature studies on man-made vitreous fibers

(MMVFs) in commercial and residential buildings indicate that these fibers are not typically present in normal building air at significant levels.

Meeker continued to explain that these samples were collected on mixed cellulose ester (MCE) filters. He is using scanning electron microscope (SEM) examination to analyze the filters; however, this is not the most appropriate analysis to use with MCE filters. He suggested that the members of the panel solicit the services of a laboratory that can perform transmission electron microscope (TEM) analysis. Alternatively, any additional samples should be collected on polycarbonate filters, which is a more appropriate medium for SEM analysis.

Pat Evangelista asked Meeker to clarify how many samples he received from EPA Region 2. Meeker said he received two background samples (one apartment and one common area sample) and three to five other samples (including one background and one ambient air sample). Only two of the background samples were collected from the building interior. Evangelista indicated that EPA Region 2 intended to send Meeker more samples from the background study, and will follow up with Meeker with those samples.

Lippman suggested that the members of the panel solicit help from the RJ Lee Group. This group indicated they have established a method that may be used to identify a signature contaminant. He understood that the RJ Lee Group is very experienced in TEM analysis. Meeker and Lioy agreed that the members of the panel should contact this group.

David Newman asked Meeker to describe the special fiber characteristics that distinguish a background sample from a WTC-contaminated sample. Meeker explained that he examined the chemistry of the fibers. These fibers are not unique to the trade center, but the composition is very specific and the abundance of those fibers was very high in the dust. The U.S. Geological Survey (USGS) collected 36 WTC dust samples in lower Manhattan, and the slag wool, which is a type of glass fiber, was 20% to 30% of the total bulk dust sample. It would be very easy to analyze other dust samples to see if they match that fiber composition. Meeker suspected that the RJ Lee Group is using the composition of the fibers coupled with other signatures, perhaps concrete and gypsum. Meeker believes that an elemental analysis would be a good complement to the TEM or SEM analysis.

Lioy agreed that these WTC samples are composed of 30% to 40% fibers and 30 to 40% concrete. This is about 80 percent of the mass, based on a large number of results from many sources. Without the presence of these two major components in the sample, it would be difficult to say that there is microscopic contamination of WTC dust.

Catherine McVay Hughes asked for clarification on where the samples were collected, noting that the dust plume dispersion patterns were widely variable across the city, and dust characteristics would be different within residences with blown-out windows versus intact windows. Lioy stated that the samples that contained a combined total of

approximately 80% fiber and concrete were found in all directions around the WTC site, from buildings with blown-out windows as well as intact windows.

Gilman suggested that perhaps a panel subgroup be formed that will work with Region 2 to do the following:

- Determine what work has been completed toward establishing a signature profile;
- Evaluate what steps would be required to provide a validated method for assessing a signature profile;
- Evaluate the most appropriate method of analysis for the background samples;
- Determine the significance of a sample that does not contain the signature profile; and
- Contact the RJ Lee Group to collect information from their research.

This group should aim to provide a written summary of their findings to the members of the panel prior to the May 24 technical panel meeting. Gilman suggested that Greg Meeker lead this subpanel, with help from Paul Lioy, Morton Lippman, and Mark Maddaloni from EPA Region 2, as well as other people that may be identified as appropriate. Lippman noted that he cannot be present at the May 24 meeting and suggested that his colleague, Lung Chi Chen, participate in the working group. Patricia Clarke also suggested that Dan Pring be involved; Dan Pring led the WTC risk analysis in the ten months following 9/11. Hughes suggested that Newman work with this group; however, Newman did not believe he would significantly contribute to the subgroup.

Clarke also noted that Dan Pring had researched the RJ Lee Group and had some concerns. For example, the RJ Lee Group concluded that their samples containing fly ash/vitreous spheres were produced from the WTC fires. However, they did not rule out other potential sources of fly ash contamination, including coal-fired furnaces, electrical generation, or other sources. Meeker agreed that it would be good to have Pring involved, as well as Jim Mollett at MVA. There are many laboratories and workers that may be useful to this effort.

Meeker noted with interest the identification of glass spheres in the samples, since most of the glass spheres are part of the slag wool product and would not be produced from the fires. They would have the same composition as the fibers. They could be used as part of the signature, but they are part of the original material, not from the fires. Lippman noted that this observation does not eliminate coal effluent as a source, since slag is simply a by-product of the steel industry made into fiber, and contains shot as well.

Jeanne Stellman stated that it is important to clarify the relationship between a signature profile and the COPCs. Gilman asked the members of the panel what should be sampled (for example, asbestos and the signature profile). Lippman pointed out that the source of

any of the chemicals on the list are not limited to the WTC, and are therefore limited in value for understanding the extent of contamination or recontamination. Meeker agreed, and added that this further establishes the need to determine a signature profile for WTC contamination.

Maddaloni asked the members of the panel discuss the significance of a sample that does not contain the signature profile, and also the risk assessment actions that would be triggered if the signature profile is present in a sample. Lioy pointed out that the goal of this study is not necessarily a full risk assessment. The goal is to determine if there are homes that contain contamination, including homes that were previously cleaned. If possible, the members of the panel should identify a signature profile that may be used in this effort.

Evangelista noted the importance of identifying how these data will be analyzed in terms of risk because users of a space that is sampled expect to see how those data are interpreted, as well as to know what action will be taken based on that interpretation. Lioy responded that additional cleaning needs to be the action, rather than calculating a hypothetical risk value. If you find WTC dust in a home, then the home must be cleaned. Evangelista responded that EPA does not typically operate in that way, and that the mechanism and funding for following up in the manner that has been discussed needs to be clearly defined. Lippman noted that the community has found problems with EPA's typical methods and might appreciate a more direct method. Lioy stated that the panel was established to facilitate action. The public wants cleaning, and an intermediate step for risk assessment does not facilitate cleaning.

Lippman pointed out that the risks to human health have largely already been incurred, and noted that the members of the panel should not become too concerned with low-level risk. Rather, it may be more beneficial to promote understanding of how the risk was incurred and talk about what procedures to establish in case this kind of emergency ever occurs again.

Sven Rodenbach indicated support for the direction the panel discussions were moving, including efforts to identify a signature profile to determine if there is remaining contamination. He further noted his agreement with EPA's considerations for community involvement, and expressed concern that the members of the panel be clear about what these results may or may not be used for, including risk calculation. Additionally, he noted that people might be hesitant to allow background sampling in their homes.

Stellman reminded the members of the panel that these studies should address differential deposition into heating, ventilation, and air conditioning (HVAC) systems, as well as scenarios that may contribute to background contamination. These issues have been a major community concern.

Gilman stated that no panel members have yet proposed any additional contaminants to measure, other than establishing a signature profile. Additionally, some members of the panel find value in establishing the meaning of the absence of the signature, but does not

find as much value in establishing the meaning of the presence of the signature, in terms of the health risks.

Newman expressed that the concern in the residential and labor communities seems to be for particular substances rather than gypsum or MMVF. He suggested that the members of the panel not remove from consideration any of the contaminants of concern.

Lippman stated that the health effects that have occurred may or may not be due to concrete or gypsum. The risk assessment that was conducted indicated that these health effects would not have been caused by these contaminants. Lioy suggested that the goal of the program should be to first determine if there is WTC dust. If WTC dust is identified and cannot be successfully cleaned, then the area should be sampled for the other contaminants. Then, the residual risk could be investigated. Rodenbach stated that the members of the panel should be clear that the goal is to identify contamination.

Stellman expressed concern that the public may have concerns if a sample indicates WTC contamination and then COPCs are not identified. For this reason, community involvement needs to be a priority. Lioy clarified that a protocol could be that if WTC dust is found, then the space would be cleaned. After cleaning, the space would be tested to determine which COPCs remain and what residual contamination risk is associated with this level. Stellman suggested the term “contamination levels” is used in place of “contamination risk,” since the latter implies a risk assessment.

4. SAMPLING LOCATIONS

Gilman stated that EPA Region 2 has been studying the distribution of population and buildings for establishing a sampling protocol. EPA seeks input from the members of the panel on the different categories of buildings to sample and to identify the relative importance of these building categories.

Dan Santella said that the New York City Department of Buildings will provide a database which categorizes the buildings in lower Manhattan. There are 2,200 buildings in lower Manhattan below Canal Street and 150 categories of buildings. For convenience, EPA aggregated these categories into 11 larger groups, including:

- 700 special use buildings (e.g., warehouses, gas stations, garages, houses of worship etc.)
- 900 residential buildings (single family homes to 55-story apartment buildings; these buildings include at least one single family home)
- Approximately 20 government buildings
- Approximately 30 schools or hospitals
- 15 hotels

- 330 office buildings
- 40 undetermined use buildings
- 17 large utility buildings
- 100 other outdoor parcels of land (playgrounds, cemeteries, parking lots, etc.)

Gilman asked the members of the panel to comment on these categories. Lippman suggested that residential units have to be included, and that office buildings should be considered because office workers were also affected.

Stellman suggested combining the 150 categories into a small set of groups to facilitate the analysis. Santella clarified that the 150 categories were aggregated into the 10 larger building groups (and one outdoor land category) based upon usage. Hughes suggested that another grouping might include buildings with and without lead paint. Clarke noted that lead contamination could occur from non-lead paint sources, so this grouping option may not be useful. Additionally, Santella pointed out that reconstruction activities are probably releasing hundreds of pounds of lead paint.

A panelist noted that schools, firehouses, and perhaps some other public buildings should be considered for sampling, along with residential, commercial, and government office buildings.

Newman suggested that the members of the panel consider identifying types of locations that can be presumed to have been more heavily impacted. For example, utility vaults that were open on or subsequent to 9/11 and air handling units in buildings equipped in mechanical ventilation systems are types of locations that could have received more contamination. These types of locations should be considered in all buildings that will be studied.

Lippman stated that no residences that central HVAC throughout the buildings. Hughes indicated that, in fact, her building had central HVAC throughout the building.

Markowitz summarized the types of variables that are being discussed: use, size, type of ventilation, and geographic proximity to ground zero. Newman asked the members of the panel if there was a fifth variable to consider. Lioy and some of the other members of the panel agreed with these four variables.

Stellman revisited the issue of geographic extent of sampling, and asked if there are subcategories within the building groupings that may account for building type. For example, whether the building's windows were sealed or not and the building's size and dimensions may be important to categorization. She suggested that the variable should be called something other than "size" to reflect the building's overall characterization, including size, window types, and dimensions.

Henry Kahn pointed out that all these factors are important and should be considered when the sampling plan is designed in order to account for sample population stratification issues. Ultimately, some variables may have to be prioritized for sample stratification. Stellman suggested that it is always more difficult to aggregate data than to break out data that were never collected; therefore, it is better to collect a wider sample now. Lioy thought that was a fair approach.

Gautier asked panel members to express their thoughts on sampling north of Canal Street. Hughes stated this was a good idea. Lippman asked where the new boundary would be. Gautier responded that it made sense to open it up to cover the extent of where the WTC signature was identified. Rodenbach noted that a potential problem with this approach was that there was no pattern of contamination; therefore, it may be difficult to delineate the extent of contamination. Lioy suggested that the sampling plan begin with Canal Street; then, if a pattern is identified that extends the sampling further north, this could be evaluated at that time.

Santella suggested that the members of the panel review the high-resolution aerial photographs that were taken by the Keystone Aerial Survey on September 13, 2001. These photographs show a fairly clear delineation of where the plume traveled as a result of the towers' collapse. Newman asked where that boundary extends. Santella responded that the plume barely extends to Chambers Street on these photos. Lioy stated that he has seen the photographs and believes they would provide a good barometer for this study but cannot be considered conclusive. Therefore, he believes that beginning the study above Chambers Street at Canal Street and moving forward from there depending on the results of the data is a reasonable place to start. Rodenbach and Gautier agreed with this approach.

Krish Radhakrishnan stated that NYC Department of Environmental Protection's (DEP's) visual inspection of buildings three blocks south of Canal Street did not indicate WTC contamination. Evangelista asked that the members of the panel also consider the information and data gathered by NYC DEP, and that they examine what data are available from public and private sources.

Gilman suggested that another subpanel be formed to identify and obtain additional private and public sampling data that were collected. The subpanel will be led by David Newman and supported by panelists Catherine McVay Hughes, Krish Radhakrishnan, and EPA Region 2.

5. SAMPLING OBJECTIVES/ OVERALL STUDY DESIGN

Gilman summarized the issues addressed at the previous technical panel meeting related to sampling objectives. Originally, EPA researched the issue of recontamination. For the next phase of sampling, some members of the panel have suggested reframing the objectives in terms of the buildings to be sampled, sample analytes, building types, and the geographic extent of contamination. Gilman asked the members of the panel if that was an accurate representation. Lioy agreed that it was.

Gilman noted that the members of the panel identified another approach to consider in establishing the study design: identify a set of accessible buildings and then solicit community participation to ensure that a sampling effort in these buildings addresses the needs of the community. Also, the members of the panel discussed sampling public buildings to establish the geographic extent of contamination.

Hughes asked if schools are included in the consideration of public buildings. Gilman answered that, while firehouses are broadly distributed and may correlate well to population distribution, he was not sure how the geographic distribution of schools represents the population distribution. Hughes pointed out that there is a school in Chinatown that has never been cleaned and would be a good candidate for this program. Lioy suggested that the community identify key locations of interest. Then, the members of the panel can geographically plot these to see how they work to meet the goals of the program.

Hughes asked if EPA or DEP knows what buildings have been cleaned, since she may be able to help compile that information. Stellman thought this was a good idea and suggested it is part of the structured methods by which information can be offered from the community. Wilkenfeld suggested that the City Council might be able to work with McVay Hughes to obtain this information. Stellman agreed and reiterated that a structured mechanism will work best.

A panelist summarized that two efforts are forming from these discussions:

- 1) Collect existing data from private and public efforts; and
- 2) Identify buildings where no sampling or cleanup has occurred.

Dave Newman will lead the group collecting data from the public and private sector, and Catherine McVay Hughes will lead the data collection effort to identify the sampling status of buildings, with support from Radhakrishnan and Clarke. Additionally, Hughes will work with the City Council in collecting information on buildings that have been cleaned or not cleaned.

Hughes revisited the question of sampling HVACs, and asked the members of the panel for conclusions on this topic. Gilman stated that his understanding was that the presence and type of HVAC would be used to identify building types to be considered for sampling. Within the buildings, the sampling protocol should consider where samples are collected, including in HVAC and utility vaults. Gilman asked for further input from the members of the panel. Hughes stated that samples need to be collected from within the HVAC. Another panelist agreed and pointed out that the HVAC needs to be a consideration in establishing the building type and therefore should be sampled in those buildings.

An unidentified person noted that the HVAC is a factor in the domain that may be used to stratify the population, and the members of the panel should consider how the population

should be approached in terms of these domain issues. A panelist suggested that this issue be further discussed in the May 24th technical panel meeting.

Gautier asked what authority EPA has to order cleanup of a space contaminated with gypsum, MMVF, asbestos, or any other COPC. He asked what would be the next steps if these contaminants are found (e.g., a mandatory cleanup versus a voluntary cleanup). Evangelista volunteered to research this question. Picciano suggested that only voluntary cleanup could be mandated since the program is asking for voluntary participation. A panelist noted that the residents of Manhattan are motivated and will want to remove any contamination. Picciano agreed that residents would be motivated to clean their private residences, but thought there would be less motivation to clean public or common areas. Lioy agreed.

Gilman revisited the idea of community involvement in the sampling design, and asked the members of the panel if there were further comments on this idea. Stellman stated that McVay Hughes and the City Council working together is a good first step. Additionally, there should be a formal process for the community to give input to the members of the panel in a structured way, so that the members of the panel then have a systematic mechanism for addressing feedback. Also, it would be valuable to have a person experienced in leading group processes review the charge and the meeting notes from these meetings, and provide structured feedback. Where the members of the panel have questions from the community, the members of the panel would then have a mechanism for systematically getting feedback on issues that have been raised. The public comment periods within these meetings do not afford this structure. Lioy agreed with these suggestions and comments. He further suggested that a method of publicly disseminating recommendations from members of the panel should be established in order to inform the public how the individual members of the panel came to these recommendations, and then allow for feedback from the public.

Lioy added that the efforts to address the needs of and communicate with the community should not decelerate the entire process. Wilkenfeld suggested that a community advisory board be formed to provide structured comments to the members of the panel. Such a board would take several weeks to solicit.

Gilman reminded the members of the panel that Hughes has been asked to be the formal route of communication from the community. Hughes stated that the community is happy with the way it is currently operating. Stellman noted that the members of the panel would like to be able to ask the community questions as well. Hughes said that the agenda for each meeting needs to be posted sooner so that she can solicit input from the public prior to the meetings. Additionally, she asked for transcripts of the meetings. Gilman stated that EPA has decided not to record formal transcripts, and instead will continue to provide meeting notes. He further noted that EPA will try to be more responsive for disseminating agendas and maintaining website postings.

Newman thought that technical panel meetings need to be better publicized. Gilman indicated that EPA has contacted several hundred media outlets about these meetings;

however, the Agency will consider this comment and evaluate how to make this process more effective. Newman suggested that Public Service Announcements be considered. Hughes also suggested advertising in local newspapers. Gilman agreed to forward the list of media outlets to Hughes so that she may offer any additional suggestions.

Gilman summarized the panel subgroups that will research specific topics for the May 24th meeting:

- Subpanel 1: Led by Greg Meeker.
 Identification of a WTC signature profile and analytical methods.
- Subpanel 2: Led by Dave Newman.
 Data collection from public and private sectors.
- Subpanel 3: Catherine McVay Hughes.
 Identification of sampling status of buildings and collection of
 recommendations from the community on buildings that should be
 considered for testing.

It would be helpful if these subgroups provided information to the members of the panel in advance of the May 24th meeting so that the members of the panel can prepare for the meeting with these findings.

6. PUBLIC COMMENTS

Four members of the public made comments to the members of the panel:

- Jo Pollett
- Minona Russell
- Jenna Orkin
- Kimberly Flynn

6.1 Jo Pollett

Jo Pollett expressed uncertainty about the possibility of establishing a representative WTC tracer without doing concentric sampling around the WTC site for a broad range of contaminants. She is concerned that this initiative to identify a signature profile from a limited number of samples collected in a limited geographic area will not be accurate.

Pollett presented a follow-up question to Meeker regarding the 36 USGS samples. She asked Meeker to define the geographic extent of the sample collection. Meeker indicated that he did not recall this extent exactly; however, the USGS website contains the open file report on the sample collection, which defines the geographic distribution of all the samples¹. He recalled that the sample sites extended west and fairly far east, as well as in

¹ The USGS website address is:
<http://pubs.usgs.gov/of/2001/orf-01-0429>

Battery Park. He indicated that it may be possible to establish a signature for WTC dust, because the composition of all of the samples was similar, regardless of location. Pollett stated that the data she is aware of demonstrated dispersion of many different contaminants in different locations. Meeker recognized this, and said that the main concern with this issue is the finer dust particulate which disperses differently from the larger particles. His understanding of the composition of this finer dust was that the composition was consistent with the other samples in its major components.

6.2 Minona Russell

Minona Russell expressed concern that the dust is being mischaracterized. The focus of these panel discussions considered the dust to be from the collapse of the buildings; however, the uncontrolled incineration may have been a greater source of particulates and would be expected to travel a long distance. These methods may be capable of identifying a dust signature from the collapse but not from the incineration. Additionally, there should be consideration for polycyclic aromatic hydrocarbons (PAHs), polychlorinated biphenyl compounds (PCBs), dioxins, and other byproducts of incineration.

Lioy agreed with Russell, stating that it is important to consider dust from both the collapse as well as the smoke. Lioy noted that both NYU and Columbia University have developed signatures for WTC smoke for the period between 9/11 and 9/15. Lioy asked Lippman if the USGS samples covered the post-9/15 period. Lippman responded that their samples did not analyze for organics, but rather, for elemental signatures, including chlorine, which was a major component of the fire plume. Lioy believes there is research conducted by the University of North Carolina on the PAHs in the smoke for the period between September 23, 2001 and May 2002. The members of the panel will need to evaluate these data to determine their usefulness for this study. Lippman also stated that daily samples were collected from the end of September 2001 at the NYU downtown hospital that may be used as well. Russell responded that this is why we need to extend the sample area and add more contaminants of concern.

6.3 Jenna Orkin

Jenna Orkin noted that the contaminants will spread differently with the winds according to their weight. Further, she is concerned there has not been any discussion of data in Brooklyn. Orkin stated that she did not expect that a signature or a fingerprint for this contamination could be identified, since there are exceedances of some contaminants in some areas and other contaminants in other places. Where there are exceedances, clean up should occur. Additionally, there has been no cleanup in Brooklyn, so the discussions of glass fibers near the site are not inclusive of all contamination. The public is not only concerned about short-term, respiratory illnesses but also the long-term effects. Further, if EPA wants public participation, they should not conduct outreach the way they did last

time, when they told the public that they did not expect any health effects, and only intended to console the public because they suffer from post-traumatic stress syndrome. EPA needs to tell people that cleanup is important for their health.

6.4 Kimberly Flynn

Kimberly Flynn spoke on behalf of 9/11 Environmental Action. She indicated she would describe a few of the most pressing considerations presented in their community letter to the co-chair Paul Lioy regarding problems with the public process. This letter was signed by the Sierra Club, the World Trade Center Residents Coalition, the Rebuild With a Spotlight on the Poor Coalition, Robert Gulack (Union Steward of the NTEU Chapter 293 U.S. Security and Exchange Commission), the Family Association of Tribeca East, Battery Park City United, and the Little Italy Neighbors Association. Flynn indicated that this letter will be resent with additional signatures soon.

These organizations share some serious concerns about the failure of this panel to implement proper public process. The most pressing current concerns are:

- 1) EPA has not been posting agendas in adequate time for review prior to a meeting.
- 2) Ten minutes is not adequate time for public comment.
- 3) Lack of scientific expertise cannot be used as a pretext for limiting the community participation.
- 4) Catherine McVay Hughes must be present at all meetings. If she is not available for the June 22 meeting, then that meeting should be rescheduled.
- 5) Documents that are being used to make decisions about the sampling program and this process must be available to the public. On this call, the public learned about the RJ Lee report on establishing a fingerprint for WTC contamination. This report must be posted on the Internet so the public may review it before meetings such as this.
- 6) During this call, a side panel was formed. The community must have the opportunity to nominate people to participate in any side panels. All meetings of side panels should be public. Further, there should be full disclosure of conflict-of-interest statements of the side panel participants, and copies of their curriculum vitae must be posted on the website.
- 7) Mark Wilkenfeld's curriculum vitae should be posted on the web site.
- 8) The issue of a formal mechanism for community involvement is very important and should not be situated in the City Council's office. At this time, the signators have a large network of community-based advocacy groups, and it is that network that brought in members to testify to members of this panel. Further, this type of formal mechanism is the very

reason why the EPA has instituted citizen advisory groups. What the signators are proposing is that Catherine McVay Hughes speak with the community about forming the citizen's advisory group.

Flynn noted that there is some irony in the fact that some focus of this meeting was centered on very specific ideas for community involvement. Yet she was forced to rush through her public comments because inadequate time was provided. If a genuine solution is sought for this problem, then a clear and transparent process must be implemented. The public wants to participate and contribute as partners, but the terms of that partnership must be respected.

6.5 EPA Response and Closing

Lioy clarified that no side panels are being formed. Rather, subgroups of the current panel are being formed to collect specific data. No additional people are being enlisted to be panel members. Gilman clarified that this is predominantly the case, except in the case where one panelist asked that a colleague participate in his place because of his expertise. Lioy questioned allowing his participation in the interest of moving forward. Gilman suggested that the expert be asked if his curriculum vitae could be posted and then make a determination.

Gilman further clarified that the RJ Lee information was e-mailed directly to the members of the panel by RJ Lee and was not a report that the EPA distributed or that Gilman was aware of. Meeker further clarified that the RJ Lee e-mail offered their services and did not contain any report.

Gilman thanked everyone for their participation and adjourned the call at 1:10 p.m.